



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,764	02/27/2004	John E. Boisseau	IN-5597	1893
26922	7590	11/28/2007		
BASF CORPORATION Patent Department 1609 BIDDLE AVENUE MAIN BUILDING WYANDOTTE, MI 48192			EXAMINER MUI, CHRISTINE T	
			ART UNIT 1797	PAPER NUMBER
			NOTIFICATION DATE 11/28/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LORI.HASS@BASF.COM
MARJORIE.ELLIS@BASF.COM
ANNE.SABOURIN@BASF.COM

Office Action Summary

Application No.

10/789,764

Applicant(s)

BOISSEAU ET AL.

Examiner

Christine T. Mui

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 06 November 2007 have been fully considered but they are not persuasive. As to Atlas, applicant suggests that Atlas does not teach the testing of a substrate that is placed horizontally in the test chamber and appears to depict the substrate being placed vertically or slightly offset from vertical in the chamber. The examiner disagrees. As seen on page 5, the specimen holder for the device can be in two types. The dimensions of the specimen can be 70 x 45 x 3 mm or 70 x 145 x 3 mm. This suggests that the specimen is placed horizontally in the chamber when undergoing weathering conditions. The examiner asserts the reference Atlas discloses all of the elements of claim 1 except for applying an acid solution as claimed. In view of such, previous rejection under Atlas are therefore considered proper.
2. As to Palm, the applicant argues that Palm "optimize[s] the accelerated test cycle with respect to the load of acid rain spray, as well the temperature within the testing chamber." Page 70. Even though Palm discloses the temperature change between the light and dark period is 9 degrees Celsius, this is still a variance in temperature of the chamber between the suggested range of 20 to 50 degrees Celsius (see "The Test Cycle"). The apparatus is capable of subjecting the test panel to an acid solution and to a temperature range according to the testing conditions input by the user between -40 to 150 degrees Celsius with the light on and -40 to 145 degrees Celsius with the light off. As such the previous rejections under Palm are therefore considered proper.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atlas Electric Devices Co (submitted on the Information Disclosure Statement on 29

March 2004, herein referred "Atlas"), and further in view of Palm et al. (submitted on the Information Disclosure Statement on 29 March 2004, herein referred "Palm").

7. Regarding claims 1-7, 9-11, 16 and 23 the reference Atlas discloses an extreme climate accelerated weathering apparatus where a sample is placed into in a chamber where it is subjected to a light that simulates natural light and heat where it can be exposed simultaneously, from a xenon arc lamp and black panel thermometer, wherein the natural environment is the infrared portion of natural sunlight that comes from heat. The sample is exposed in the same manner wherein direct sunlight warms the air surrounding it. The light source can produce a light in the ranges of 250 to 800 nm, within the ultraviolet and visible light wavelengths (see pages 1-3). Atlas discloses the specimen holder in the XR35 can be of two types with the dimensions of 70 x 45 x 3 mm or 70 x 145 x 3 mm. It is interpreted by the examiner that the specimen holder has a longer length than the height, the specimen that is placed within the apparatus to be exposed to weathering conditions can be place in a horizontal position. Atlas does not disclose a painted substrate subjected to the weathering conditions claimed. Palm discloses a way to find an accelerated test method that simulates coating degradation that occurs during outdoor exposure as closely as possible. A sample with a coating is based off of commercial formulations in the automotive industry. All topcoats were applied on steel panels that were pretreated with an electrocoat and primers. During testing, a simulation of acid rain solution consisting of sulphuric acid, nitric acid and hydrochloric acid with a pH = 3.2 was sprayed for 20 minutes onto the panel followed by drying and then an 18 minute spraying with deionized water. Once the spraying was

completed the panel was subjected to light only, separate from a heat source. The coatings were then evaluated dependent on the coating gloss retention (see page 69-70 and 72). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the methods of accelerating the conditions a painted substrate that undergoes acid rain treatment in a chamber by exposing it to heat and light sources to simulate the most natural conditions an automotive part, such as the roof or hood of a car, would undergo as a horizontal surface.

8. Regarding claims 8 and 12, Atlas does not specifically disclose the exposure to heat and light is conducted over a period of between 4 and 48 hours or over 24 hours. Atlas discloses that a cycle of the entire exposure test is microprocessor controlled (see page 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to program the microprocessor to expose the panel/sample for 4 to 48 hours or over a period of 24 hours of heat and light exposure to simulate conditions that occur in nature when it is a clear sunny day or an overcast day.

9. Regarding claim 13, Atlas does not specifically disclose the heat source maintaining the substrate in the temperature range of 40 degrees Celsius and 90 degrees Celsius. Atlas discloses a temperature control of a xenon lamp (see page 2) that simulates warming an object as it would in the natural environment in the XR35, as if it exposed to sunny conditions. It would have been obvious to one having ordinary skill in the art at the time the invention was made to expose the panel/sample under the xenon lamp to maintain a condition between 40 degrees Celsius and 90 degrees Celsius in the chamber, with use of the programmable microprocessor, to subject the

sample to heating as it simulates the temperature of a day in a non-winter period of the month in North America.

10. Regarding claims 14 and 21, Palm does not disclose exposing the test panel to light and heat at a relative humidity between 70 and 90%. Atlas discloses the XR35 is capable of controlling the relative humidity in the light and dark cycle between the ranges of 0 and 100% (see page 3). The test in the XR35 is controlled by an advanced wet bulb temperature depression system assuring accurate control of the relative humidity levels selected (see page 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to control the humidity of the test chamber in order to selectively subject the sample to optimal test conditions to reduce degradation of a coating on a substrate and to determine the effect of humidity on a painted substrate.

11. Regarding claim 15, Atlas does not disclose an acid spray or wash. Palm discloses subjecting a panel to an acid rain simulation spray for 20 minutes (see page 70). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use 200 to 1000 cc of acid solution to spray on the sample examined to represent a natural occurrence of a period of rain, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

12. Regarding claim 17, Atlas does not specifically disclose where the substrate is exposed to a light source for up to 12 hours at a black panel temperature of

above 40 degrees Celsius. Atlas discloses that the radiant heat that is received from the xenon arc lamp is continuously measured and controlled by a black panel thermometer (see page 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the microcontrolled processor to program the black panel thermometer to maintain the substrate at 40 degrees Celsius for 12 hours to simulate the most natural conditions instead of a sterile controlled laboratory environment.

13. Regarding claims 18-19, Atlas discloses exposing a sample in the XR35 to temperature between 40 and 90 degrees Celsius and to light from a source between 8 and 20 hours controlled by a microcontrolled processor. The XR35 is capable of turning off the lamp and maintaining the temperature between 20 and 60 degrees Celsius for up to 16 hours by control of the processor. A program is able to be set to maintain a temperature for a specific amount of time as a representation heat for a normal day. Atlas does not disclose spraying the sample with an acid or with water. Palm discloses spraying a panel with a coating similar to one in the automotive industry with an acid rain solution for 20 minutes, letting it dry and spraying it with deionized water for 18 minutes (see page 70). It would have been obvious to one having ordinary skill in the art at the time the invention was made to subject the sample in the XR35 to an acid-spraying representative of acid rain then unpolluted rain or a wash in nature to determine the degradation of a coating on a substrate.

14. Regarding claim 20, Palm does not disclose the light and dark cycles are each repeated 3 times. Atlas discloses that the cycling of the entire exposure test is

microprocessor controlled and light and dark cycles may all be programmed (see page 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to program the dark and light cycles of the exposure in the microprocessor to record and monitor the test conditions in cycles as a representation of night and day conditions.

15. Regarding claim 22, Palm does not disclose test cycles that are conducted for a total test period of 400 hours. Atlas discloses that the cycling time is microprocessor controlled (see page 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to program the cycling of the exposure test for 400 hours to record the conditions and results over a wide range of environmental parameters, as one would observe a panel in nature for 400 hours for testing purposes.

16. Regarding claim 24, Atlas and Palm do not disclose that when the substrates are tested they are evaluated on the GM Rating Scale. Palm discloses that after the testing cycles the panels are subjected to the acid rain simulation, temperature, heat, light and humidity parameters for testing and were evaluated for the gloss retention (see page 72). It would have been obvious to one having ordinary skill in the art at the time the invention was made to evaluate the panel or sample being tested to evaluate it under any rating scale that one has interest in for determine the degradation of a coating on a panel or sample in any industry, either it be in glass or automotive industry under the GM Rating Scale.

17. Regarding claims 25-28, the reference Atlas discloses a sample in a XR35 that accelerates the natural process by reproducing the light, heat and moisture in a

controlled exposure test. The sample is placed in a chamber, that can be horizontal, that is subjected to light by a xenon arc lamp and heat, which is controlled by a black panel thermometer, which can control the temperature above 30 degrees Celsius. The XR35 also controls the moisture content in the apparatus by subjecting the sample under periods of wetness or high humidity that is controlled by an advanced wet bulb temperature depress system assuring accurate control of the relative humidity levels that can be between 70 and 99% (see pages 2-3). Palm discloses a method for simulating coating degradation that occurs in outdoor exposure by having a panel similar to one in the automotive industry that is a steel panel with a topcoat that was pretreated with an electrocoat and a primer. The panel is subjected to spraying of acid rain achieved by a 20 minute front spraying in the designated test cycle then exposed to conditions of 65 degrees Celsius black standard temperature, a Xenon arc light source and a dry period followed by an 18 minute spraying with deionized water. The panel is then evaluated for its gloss retention (see pages 69-70, 72). It would have been obvious to one having ordinary skill in the art at the time the invention was made to subject the panel sample to an acid spray and wash by deionized water in the XR35 to simulate outdoor conditions if a coated material is exposed to sun and acid rain.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine T. Mui whose telephone number is (571) 270-3243. The examiner can normally be reached on Monday-Friday 8-5; Alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on (571) 272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CTM


WALTER D. GRIFFIN
SUPERVISORY PATENT EXAMINER